

Washington, D.C. 5

Senate Ends Helium Saga

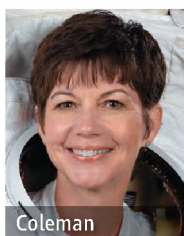
The U.S. Senate ended a protracted ping-pong match over the future of the helium market on 26 September, approving legislation that would allow the government to continue selling helium from a national reserve. The gas is coveted by scientists and high-tech companies alike. Many scientists who use helium in the lab will be relieved to see the matter settled. But a new law won't solve one problem, some say: Prices could stay relatively high for buyers of small quantities, stretching research budgets. The Senate's approval would clear the way for President Barack Obama to sign the bill.

NEWSMAKERS

Three Q's

Catherine "Cady"

Coleman is a chemist, former Air Force officer, flute player, scuba diver, and astronaut. And, most recently, Hollywood adviser. In 2011, while aboard the International Space Station, Coleman helped Sandra Bullock find her motivation as an astronaut set adrift after a collision with space debris destroys her shuttle. The new movie, *Gravity*, opens 4 October.



Coleman

Q: What did Bullock ask?

C.C.: We talked about a lot of things ... how you moved, how you kept yourself in one place. We talked about ... the emotional component of living someplace dangerous, and a place where you can be truly alone. That part of it is really challenging and hard, and this movie brings that home to me.

Q: How realistic is the movie?

C.C.: There are a lot of things that [the film does] really nicely—the look and the feel of living in low-Earth orbit, that isolation, and the specialness of having a view that not many people get to have. [But] there are a lot



Space jam. Astronaut Bullock is set adrift in *Gravity*.

Random Sample

A Panorama of Corals

Virtual divers, take a deep breath: An underwater world is at your fingertips. Last week, the Catlin Seaview Survey launched the Global Reef Record, a database of gorgeous high-resolution images of corals. The site (<http://www.globalreefrecord.org/>) will be a one-stop shop for images and data such as turbidity and water temperatures, says Ove Hoegh-Guldberg, director of the Brisbane, Australia-based Global Change Institute and chief scientist for the survey. "It's what I'm calling the world's largest stocktaking of corals in history."

Funded by international insurer Catlin Group Ltd., the survey uses a high-resolution camera that simultaneously takes images in three directions—right, left, and down—to make its panoramic coralscapes. So far, the survey—which began in September 2012 and will continue for 2 years—has recorded images of more than 32 reefs along Australia's Great Barrier Reef. Next up in 2014: the Coral Triangle, in the western Pacific Ocean. The goal is "to reveal the oceans to the world," says Richard Vevers, an advertising executive-turned-underwater-photographer who helped create the survey. One partner, Google Oceans, is already helping with that: In August, more than a billion virtual divers toured Google "street views" of the Great Barrier Reef.

Other partners include the National Oceanic and Atmospheric Administration and the Scripps Institution of Oceanography in San Diego, California. The team began a new effort last week in the reefs around Bermuda, hunting for signs of coral bleaching, a hallmark of coral mortality due to prolonged seawater heating. Next, researchers at Scripps will use an image algorithm that can detect low levels of bleaching not readily visible with traditional transects.



of coincidences—each is perhaps possible—but it's not probable that they would all happen on the same day, at the same time, or in the same order.

Q: What about space debris?

C.C.: The reason NASA doesn't make documentaries that keep people in their seats is because each of the risks in this movie is real, but we work really hard to mitigate those risks. There's a team in Colorado that tracks every piece of orbital debris over half an inch. ... These things are real, but we know how to deal with them.

FINDINGS

ID'ed: Culprit Behind Medieval Eruption

About 750 years ago, around 1257 or 1258 C.E., a powerful volcano erupted somewhere on Earth. That much of the story is written in polar ice cores: The amount of sulfur the volcano sent into the stratosphere was eight times as much as the Krakatau eruption in 1883 and twice as much as that of Tambora

in 1815. The climate impact in the Northern Hemisphere was pronounced: a cold summer, incessant rains, floods, and poor harvests, according to medieval records.

But identifying the volcano responsible has been tricky. Now, using geochemical, stratigraphical, and even historical data, a team of scientists has identified a likely culprit: Indonesia's Samalas volcano, on Lombok Island. *Babad Lombok*, Indonesian historical records written on palm leaves in Old Javanese, describe a catastrophic eruption of Samalas before the end of the 13th century that devastated surrounding villages with ash and fast-moving sweeps of hot rock and gas.

Studying outcrops and sediment analyses of these deposits, the researchers estimated the volume of ash erupted and the height of the eruption plume and reconstructed the original caldera topography—all pointing to an eruption of magnitude 7, making it one of the largest in the Holocene, the team reports this week in the *Proceedings of the National Academy of Sciences*. <http://scim.ag/Samalas eruption>